

SEQUENCE LISTING

<100> Chugai Seiyaku Kabushiki Kaisha

<120> Natural Humanized Antibody

<130> F885/PCT

<150> JP 9-271726

<151> 1997-10-03

<160> 129

<210> 1

<211> 394

<212> DNA

<213> Mouse

<223> cDNA coding for L chain V region of anti-HM1.24 antibody

<400> 1

atg ggc ttc aag atg gag tca cat ttt ctg gtc ttt gta ttc gtg ttt	48
Met Gly Phe Lys Met Glu Ser His Phe Leu Val Phe Val Phe Val Phe	
-20 -15 -10	
ctc tgg ttg tct ggt gtt gac gga gac att gtg atg acc cag tct cac	96
Leu Trp Leu Ser Gly Val Asp Gly Asp Ile Val Met Thr Gln Ser His	
-5 -1 1 5	
aaa ttc atg tcc aca tca gta gga gac agg gtc agc atc acc tgc aag	144
Lys Phe Met Ser Thr Ser Val Gly Asp Arg Val Ser Ile Thr Cys Lys	
10 15 20	
gcc agt cag gat gtg aat act gct gta gcc tgg tat caa caa aaa cca	192
Ala Ser Gln Asp Val Asn Thr Ala Val Ala Trp Tyr Gln Gln Lys Pro	
25 30 35 40	
gga caa tcg cct aaa cta ctg att tac tcg gca tcc aac cgg tac act	240
Gly Gln Ser Pro Lys Leu Leu Ile Tyr Ser Ala Ser Asn Arg Tyr Thr	
45 50 55	

gga gtc cct gat cgc atc act ggc agt gga tct ggg acg gat ttc act 288
 Gly Val Pro Asp Arg Ile Thr Gly Ser Gly Ser Gly Thr Asp Phe Thr
 60 65 70
 ttc acc atc agc agt gtg cag gcg gaa gac ctg gca ctt tat tac tgt 336
 Phe Thr Ile Ser Ser Val Gln Ala Glu Asp Leu Ala Leu Tyr Tyr Cys
 75 80 85
 cag caa cat tat agt act cca ttc acg ttc ggc tcg ggg aca aag ttg 384
 Gln Gln His Tyr Ser Thr Pro Phe Thr Phe Gly Ser Gly Thr Lys Leu
 90 95 100
 gaa ata aaa c 394
 Glu Ile Lys
 105

<210> 2
 <211> 131
 <212> PRT
 <213> Mouse

<223> Amino acid sequence of L chain V region of mouse
 anti-HM1.24 antibody

<400> 2
 Met Gly Phe Lys Met Glu Ser His Phe Leu Val Phe Val Phe Val Phe
 -20 -15 -10
 Leu Trp Leu Ser Gly Val Asp Gly Asp Ile Val Met Thr Gln Ser His
 -5 -1 1 5
 Lys Phe Met Ser Thr Ser Val Gly Asp Arg Val Ser Ile Thr Cys Lys
 10 15 20
 Ala Ser Gln Asp Val Asn Thr Ala Val Ala Trp Tyr Gln Gln Lys Pro
 25 30 35 40
 Gly Gln Ser Pro Lys Leu Leu Ile Tyr Ser Ala Ser Asn Arg Tyr Thr
 45 50 55
 Gly Val Pro Asp Arg Ile Thr Gly Ser Gly Ser Gly Thr Asp Phe Thr
 60 65 70
 Phe Thr Ile Ser Ser Val Gln Ala Glu Asp Leu Ala Leu Tyr Tyr Cys
 75 80 85
 Gln Gln His Tyr Ser Thr Pro Phe Thr Phe Gly Ser Gly Thr Lys Leu
 90 95 100

Glu Ile Lys

105

<210> 3

<211> 418

<212> DNA

<213> Mouse

<223> cDNA coding for H chain V region of mouse anti-HM1.24 antibody

<400> 3

atg gaa tgt aac tgg ata ctt cct ttt att ctg tca gta act tca ggt 48
Met Glu Cys Asn Trp Ile Leu Pro Phe Ile Leu Ser Val Thr Ser Gly
-15 -10 -5
gcc tac tca cag gtt caa ctc cag cag tct ggg gct gag ctg gca aga 96
Ala Tyr Ser Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Ala Arg
-1 1 5 10
cct ggg gct tca gtg aag ttg tcc tgc aag gct tct ggc tac acc ttt 144
Pro Gly Ala Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe
15 20 25
act ccc tac tgg atg cag tgg gta aaa cag agg cct gga cag ggt ctg 192
Thr Pro Tyr Trp Met Gln Trp Val Lys Gln Arg Pro Gly Gln Gly Leu
30 35 40 45
gaa tgg att ggg tct att ttt cct gga gat ggt gat act agg tac agt 240
Glu Trp Ile Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
50 55 60
cag aag ttc aag ggc aag gcc aca ttg act gca gat aaa tcc tcc agt 288
Gln Lys Phe Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser
65 70 75
aca gcc tac atg caa ctc agc atc ttg gca ttt gag gac tct gcg gtc 336
Thr Ala Tyr Met Gln Leu Ser Ile Leu Ala Phe Glu Asp Ser Ala Val
80 85 90
tat tac tgt gca aga gga tta cga cga ggg ggg tac tac ttt gac tac 384
Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
95 100 105

tgg ggc caa ggc acc act ctc aca gtc tcc tca g
 Trp Gly Gln Gly Thr Thr Leu Thr Val Ser Ser
 110 115 120

418

<210> 4
 <211> 139
 <212> PRT
 <213> Mouse

<223> Amino acid sequence of H chain V region of mouse
 anti-HM1.24 antibody

<400> 4
 Met Glu Cys Asn Trp Ile Leu Pro Phe Ile Leu Ser Val Thr Ser Gly
 -15 -10 -5
 Ala Tyr Ser Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Ala Arg
 -1 1 5 10
 Pro Gly Ala Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25
 Thr Pro Tyr Trp Met Gln Trp Val Lys Gln Arg Pro Gly Gln Gly Leu
 30 35 40 45
 Glu Trp Ile Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60
 Gln Lys Phe Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser
 65 70 75
 Thr Ala Tyr Met Gln Leu Ser Ile Leu Ala Phe Glu Asp Ser Ala Val
 80 85 90
 Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105
 Trp Gly Gln Gly Thr Thr Leu Thr Val Ser Ser
 110 115 120

<210> 5
 <211> 11
 <212> PRT
 <213> Artificial Sequence

002230"36060560

<220> CDR(1) of L chain V region of anti-HM1.24 antibody
<223>

<400> 5

Lys Ala Ser Gln Asp Val Asn Thr Ala Val Ala
1 5 10

<210> 6
<211> 7
<212> PRT
<213> Artificial Sequence

<220> CDR(2) of L chain V region of anti-HM1.24 antibody
<223>

<400> 6

Ser Ala Ser Asn Arg Tyr Thr
1 5

<210> 7
<211> 9
<212> PRT
<213> Artificial Sequence

<220> CDR(3) of L chain V region of anti-HM1.24 antibody
<223>

<400> 7

Gln Gln His Tyr Ser Thr Pro Phe Thr
1 5

<210> 8
<211> 5
<212> PRT
<213> Artificial Sequence

<220> CDR(1) of H chain V region of anti-HM1.24 antibody
<223>

<400> 8
Pro Tyr Trp Met Gln
1 5

<210> 9
<211> 16
<212> PRT
<213> Artificial Sequence

<220> CDR(2) of H chain V region of anti-HM1.24 antibody
<223>

<400> 9
Ser Ile Phe Gly Asp Gly Asp Thr Arg Tyr Ser Gln Lys Phe Lys Gly
1 5 10 15

<210> 10
<211> 11
<212> PRT
<213> Artificial Sequence

<220> CDR(3) of H chain V region of anti-HM1.24 antibody
<223>

<400> 10
Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
1 5 10

<210> 11
<211> 379
<212> DNA
<213> Artificial Sequence

<220> DNA coding for humanized L chain V region of
anti-HM1.24 antibody

<223>

<400> 11

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Met Gly Trp Ser Cys Ile Ile Leu Ser Leu Val Ala Thr Ala Thr Gly	
-15 -10 -5	
gtc cac tcc gac atc cag atg acc cag agc cca agc agc ctg agc gcc	96
Val His Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala	
-1 1 5 10	
agc gtg ggt gac aga gtg acc atc acc tgt aag gct agt cag gat gtg	144
Ser Val Gly Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln Asp Val	
15 20 25	
aat act gct gta gcc tgg tac cag cag aag cca gga aag gct cca aag	192
Asn Thr Ala Val Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys	
30 35 40 45	
ctg ctg atc tac tcg gca tcc aac cgg tac act ggt gtg cca agc aga	240
Leu Leu Ile Tyr Ser Ala Ser Asn Arg Tyr Thr Gly Val Pro Ser Arg	
50 55 60	
ttc agc ggt agc ggt agc ggt acc gac ttc acc ttc acc atc agc agc	288
Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser	
65 70 75	
ctc cag cca gag gac atc gct acc tac tac tgc cag caa cat tat agt	336
Leu Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln His Tyr Ser	
80 85 90	
act cca ttc acg ttc ggc caa ggg acc aag gtg gaa atc aaa c	379
Thr Pro Phe Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys	
95 100 105	

<210> 12

<211> 126

<212> PRT

<213> Artificial Sequence

<220> Humanized L chain V region of anti-HM1.24 antibody

<223>

002220" 86060560

<400> 12

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Met Gly Trp Ser Cys Ile Ile Leu Ser Leu Val Ala Thr Ala Thr Gly
      -15                -10                -5
Val His Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala
      -1  1                5                10
Ser Val Gly Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln Asp Val
      15                20                25
Asn Thr Ala Val Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys
      30                35                40                45
Leu Leu Ile Tyr Ser Ala Ser Asn Arg Tyr Thr Gly Val Pro Ser Arg
      50                55                60
Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser
      65                70                75
Leu Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln His Tyr Ser
      80                85                90
Thr Pro Phe Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
      95                100                -                105

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<210> 13

<211> 379

<212> DNA

<213> Artificial Sequence

<220> DNA coding for humanized L chain V region of
anti-HM1.24 antibody

<223>

<400> 13

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atg gga tgg agc tgt atc atc ctc tcc ttg gta gca aca gct aca ggt      48
Met Gly Trp Ser Cys Ile Ile Leu Ser Leu Val Ala Thr Ala Thr Gly
      -15                -10                -5
gtc cac tcc gac atc cag atg acc cag agc cca agc agc ctg agc gcc      96
Val His Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala
      -1  1                5                10
agc gtg ggt gac aga gtg acc atc acc tgt aag gct agt cag gat gtg      144
Ser Val Gly Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln Asp Val
      15                20                25

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aat act gct gta gcc tgg tac cag cag aag cca gga aag gct cca aag      192
Asn Thr Ala Val Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys
 30              35              40              45
ctg ctg atc tac tcg gca tcc aac cgg tac act ggt gtg cca agc aga      240
Leu Leu Ile Tyr Ser Ala Ser Asn Arg Tyr Thr Gly Val Pro Ser Arg
              50              55              60
ttc agc ggt agc ggt agt ggt acc gac tac acc ttc acc atc agc agc      288
Phe Ser Gly Ser Gly Ser Gly Thr Asp Tyr Thr Phe Thr Ile Ser Ser
              65              70              75
ctc cag cca gag gac atc gct acc tac tac tgc cag caa cat tat agt      336
Leu Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln His Tyr Ser
              80              85              90
act cca ttc acg ttc ggc caa ggg acc aag gtg gaa atc aaa c      379
Thr Pro Phe Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
          95              100              105

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<210>    14
<211>    126
<212>    PRT
<213>    Artificial Sequence

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<220>    Humanized L chain V region of anti-HM1.24 antibody
<223>

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<400>    14
Met Gly Trp Ser Cys Ile Ile Leu Ser Leu Val Ala Thr Ala Thr Gly
              -15              -10              -5
Val His Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala
              -1    1              5              10
Ser Val Gly Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln Asp Val
              15              20              25
Asn Thr Ala Val Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys
              30              35              40              45
Leu Leu Ile Tyr Ser Ala Ser Asn Arg Tyr Thr Gly Val Pro Ser Arg
              50              55              60
Phe Ser Gly Ser Gly Ser Gly Thr Asp Tyr Thr Phe Thr Ile Ser Ser
              65              70              75

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Leu Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln His Tyr Ser
80 85 90
Thr Pro Phe Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
95 100 105

<210> 15
<211> 418
<212> DNA
<213> Artificial Sequence

<220> DNA coding for humanized H chain V region(version a)
of anti-HM1.24 antibody

<223>

<400> 15
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Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
-15 -10 -5
gct cac tcc cag gtg cag ctg gtg cag tct ggg gct gag gtg aag aag 96
Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
-1 1 5 10
cct ggg gcc tca gtg aag gtt tcc tgc aag gca tct gga tac acc ttc 144
Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
15 20 25
act ccc tac tgg atg cag tgg gtg cga cag gcc cct gga caa ggg ctt 192
Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
30 35 40 45
gag tgg atg gga tct att ttt cct gga gat ggt gat act agg tac agt 240
Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
50 55 60
cag aag ttc aag ggc aga gtc acc atg acc gca gac acg tcc acg agc 288
Gln Lys Phe Lys Gly Arg Val Thr Met Thr Ala Asp Thr Ser Thr Ser
65 70 75
aca gtc tac atg gag ctg agc agc ctg aga tct gag gac acg gcc gtg 336
Thr Val Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
80 85 90

tat tac tgt gcg aga gga tta cga cga ggg ggg tac tac ttt gac tac 384
 Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105

tgg ggg caa ggg acc acg gtc acc gtc tcc tca g 418
 Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120

<210> 16
 <211> 139
 <212> PRT
 <213> Artificial Sequence

<220> Humanized H chain V region(version a) of anti-HM1.24
 antibody

<223>

<400> 16
 Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
 -15 -10 -5
 Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10
 Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25
 Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 30 35 40 45
 Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60
 Gln Lys Phe Lys Gly Arg Val Thr Met Thr Ala Asp Thr Ser Thr Ser
 65 70 75
 Thr Val Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
 80 85 90
 Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105
 Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120

<210> 17
 <211> 418

002222"03200096060560

<212> DNA

<213> Artificial Sequence

<220> DNA coding for humanized H chain V region(version b)
of anti-HM1.24 antibody

<223>

<400> 17

atg gac tgg acc tgg agg gtc ttc ttc ttg ctg gct gta gct cca ggt 48
Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
-15 -10 -5
gct cac tcc cag gtg cag ctg gtg cag tct ggg gct gag gtg aag aag 96
Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
-1 1 5 10
cct ggg gcc tca gtg aag gtt tcc tgc aag gca tct gga tac acc ttc 144
Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
15 20 25
act ccc tac tgg atg cag tgg gtg cga cag gcc cct gga caa ggg ctt 192
Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
30 35 40 45
gag tgg atg gga tct att ttt cct gga gat ggt gat act agg tac agt 240
Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
50 55 60
cag aag ttc aag ggc aaa gtc acc atg acc gca gac acg tcc acg agc 288
Gln Lys Phe Lys Gly Lys Val Thr Met Thr Ala Asp Thr Ser Thr Ser
65 70 75
aca gtc tac atg gag ctg agc agc ctg aga tct gag gac acg gcc gtg 336
Thr Val Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
80 85 90
tat tac tgt gcg aga gga tta cga cga ggg ggg tac tac ttt gac tac 384
Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
95 100 105
tgg ggg caa ggg acc acg gtc acc gtc tcc tca g 418
Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
110 115 120

<210> 18

<211> 139

<212> PRT
 <213> Artificial Sequence
 <220> Humanized H chain V region(version b) of anti-HM1.24 antibody
 <223>

<400> 18
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 -15 -10 -5
 Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10
 Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25
 Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 30 35 40 45
 Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60
 Gln Lys Phe Lys Gly Lys Val Thr Met Thr Ala Asp Thr Ser Thr Ser
 65 70 75
 Thr Val Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
 80 85 90
 Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105
 Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120

<210> 19
 <211> 418
 <212> DNA
 <213> Artificial Sequence
 <220> DNA coding for H chain V region(version c) of anti-HM1.24 antibody
 <223>
 <400> 19

atg gac tgg acc tgg agg gtc ttc ttc ttg ctg gct gta gct cca ggt	48
Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly	
-15 -10 -5	
gct cac tcc cag gtg cag ctg gtg cag tct ggg gct gag gtg aag aag	96
Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys	
-1 1 5 10	
cct ggg gcc tca gtg aag gtt tcc tgc aag gca tct gga tac acc ttc	144
Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe	
15 20 25	
act ccc tac tgg atg cag tgg gtg cga cag gcc cct gga caa ggg ctt	192
Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu	
30 35 40 45	
gag tgg atg gga tct att ttt cct gga gat ggt gat act agg tac agt	240
Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser	
50 55 60	
cag aag ttc aag ggc aga gtc act atg acc gca gac aag tcc acg agc	288
Gln Lys Phe Lys Gly Arg Val Thr Met Thr Ala Asp Lys Ser Thr Ser	
65 70 75	
aca gtc tac atg gag ctg agc agc ctg aga tct gag gac acg gcc gtg	336
Thr Val Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val	
80 85 90	
tat tac tgt gcg aga gga tta cga cga ggg ggg tac tac ttt gac tac	384
Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr	
95 100 105	
tgg ggg caa ggg acc acg gtc acc gtc tcc tca g	418
Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser	
110 115 120	

<210> 20

<211> 139

<212> PRT

<213> Artificial Sequence

<220> H chain V region(version c) of anti-HM1.24 antibody

<223>

<400> 20

Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
 -15 -10 -5
 Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10
 Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25
 Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 30 35 40 45
 Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60
 Gln Lys Phe Lys Gly Arg Val Thr Met Thr Ala Asp Lys Ser Thr Ser
 65 70 75
 Thr Val Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
 80 85 90
 Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105
 Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120

<210> 21
 <211> 418
 <212> DNA
 <213> Artificial Sequence

 <220> DNA coding for humanized H chain V region(version d)
 of anti-HM1.24 antibody
 <223>

<400> 21
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 Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
 -15 -10 -5
 gct cac tcc cag gtg cag ctg gtg cag tct ggg gct gag gtg aag aag 96
 Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10
 cct ggg gcc tca gtg aag gtt tcc tgc aag gca tct gga tac acc ttc 144
 Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25

act ccc tac tgg atg cag tgg gtg cga cag gcc cct gga caa ggg ctt 192
 Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 30 35 40 45
 gag tgg atg gga tct att ttt cct gga gat ggt gat act agg tac agt 240
 Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60
 cag aag ttc aag ggc aaa gtc acc atg acc gca gac aag tcc acg agc 288
 Gln Lys Phe Lys Gly Lys Val Thr Met Thr Ala Asp Lys Ser Thr Ser
 65 70 75
 aca gtc tac atg gag ctg agc agc ctg aga tct gag gac acg gcc gtg 336
 Thr Val Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
 80 85 90
 tat tac tgt gcg aga gga tta cga cga ggg ggg tac tac ttt gac tac 384
 Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105
 tgg ggg caa ggg acc acg gtc acc gtc tcc tca g 418
 Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120

<210> 22
 <211> 139
 <212> PRT
 <213> Artificial Sequence

<220> H chain V region(version d) of anti-HM1.24 antibody
 <223>

<400> 22
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 -15 -10 -5
 Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10
 Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25
 Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 30 35 40 45
 Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60

Gln Lys Phe Lys Gly Lys Val Thr Met Thr Ala Asp Lys Ser Thr Ser
65 70 75
Thr Val Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
80 85 90
Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
95 100 105
Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
110 115 120

<210> 23
<211> 418
<212> DNA
<213> Artificial Sequence

<220> DNA coding for humanized H chain V region(version e)
of anti-HM1.24 antibody

<223>

<400> 23
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Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
-15 -10 -5
gct cac tcc cag gtg cag ctg gtg cag tct ggg gct gag gtg aag aag 96
Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
-1 1 5 10
cct ggg gcc tca gtg aag gtt tcc tgc aag gca tct gga tac acc ttc 144
Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
15 20 25
act ccc tac tgg atg cag tgg gtg cga cag gcc cct gga caa ggg ctt 192
Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
30 35 40 45
gag tgg atg gga tct att ttt cct gga gat ggt gat act agg tac agt 240
Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
50 55 60
cag aag ttc aag ggc aga gcc acc ctg acc gca gac acg tcc acg agc 288
Gln Lys Phe Lys Gly Arg Ala Thr Leu Thr Ala Asp Thr Ser Thr Ser
65 70 75

aca gtc tac atg gag ctg agc agc ctg aga tct gag gac acg gcc gtg 336
 Thr Val Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
 80 85 90
 tat tac tgt gcg aga gga tta cga cga ggg ggg tac tac ttt gac tac 384
 Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105
 tgg ggg caa ggg acc acg gtc acc gtc tcc tca g 418
 Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120

<210> 24
 <211> 239
 <212> PRT
 <213> Artificial Sequence

<220> H chain V region(version e) of anti-HM1.24 antibody
 <223>

<400> 24
 Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
 -15 -10 -5
 Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10
 Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25
 Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 30 35 40 45
 Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60
 Gln Lys Phe Lys Gly Arg Ala Thr Leu Thr Ala Asp Thr Ser Thr Ser
 65 70 75
 Thr Val Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
 80 85 90
 Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105
 Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120

<210> 25
 <211> 418
 <212> DNA
 <213> Artificial Sequence

 <220> DNA coding for humanized H chain V region(version f)
 of anti-HM1.24 antibody
 <223>

 <400> 25
 atg gac tgg acc tgg agg gtc ttc ttc ttg ctg gct gta gct cca ggt 48
 Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
 -15 -10 -5
 gct cac tcc cag gtg cag ctg gtg cag tct ggg gct gag gtg aag aag 96
 Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10
 cct ggg gcc tca gtg aag gtt tcc tgc aag gca tct gga tac acc ttc 144
 Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25
 act ccc tac tgg atg cag tgg gtg cga cag gcc cct gga caa ggg ctt 192
 Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 30 35 40 45
 gag tgg atg gga tct att ttt cct gga gat ggt gat act agg tac agt 240
 Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60
 cag aag ttc aag ggc aga gcc acc ctg act gca gac acg tcc tcg agc 288
 Gln Lys Phe Lys Gly Arg Ala Thr Leu Thr Ala Asp Thr Ser Ser Ser
 65 70 75
 aca gcc tac atg gag ctg agc agc ctg aga tct gag gac acg gcc gtg 336
 Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
 80 85 90
 tat tac tgt gcg aga gga tta cga cga ggg ggg tac tac ttt gac tac 384
 Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105
 tgg ggg caa ggg acc acg gtc acc gtc tcc tca g 418
 Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120

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<210> 26
 <211> 139
 <212> PRT
 <213> Artificial Sequence

 <220> Humanized H chain V region(version f) of anti-HM1.24 antibody
 <223>

<400> 26
 Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
 -15 -10 -5
 Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10
 Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25
 Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 30 35 40 45
 Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60
 Gln Lys Phe Lys Gly Arg Ala Thr Leu Thr Ala Asp Thr Ser Ser Ser
 65 70 75
 Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
 80 85 90
 Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105
 Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120

<210> 27
 <211> 418
 <212> DNA
 <213> Artificial Sequence

 <220> DNA coding for humanized H chain V region(version g)
 of anti-HM1.24 antibody
 <223>

<400> 27

atg gac tgg acc tgg agg gtc ttc ttc ttg ctg gct gta gct cca ggt	48
Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly	
-15 -10 -5	
gct cac tcc cag gtg cag ctg gtg cag tct ggg gct gag gtg aag aag	96
Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys	
-1 1 5 10	
cct ggg gcc tca gtg aag gtt tcc tgc aag gca tct gga tac acc ttc	144
Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe	
15 20 25	
act ccc tac tgg atg cag tgg gtg cga cag cgc cct gga caa ggg ctt	192
Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Arg Pro Gly Gln Gly Leu	
30 35 40 45	
gag tgg atg gga tct att ttt cct gga gat ggt gat act agg tac agt	240
Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser	
50 - 55 60	
cag aag ttc aag ggc aga gtc acc atg acc gca gac acg tcc acg agc	288
Gln Lys Phe Lys Gly Arg Val Thr Met Thr Ala Asp Thr Ser Thr Ser	
65 70 75	
aca gtc tac atg gag ctg agc agc ctg aga tct gag gac acg gcc gtg	336
Thr Val Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val	
80 85 90	
tat tac tgt gcg aga gga tta cga cga ggg ggg tac tac ttt gac tac	384
Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr	
95 100 105	
tgg ggg caa ggg acc acg gtc acc gtc tcc tca g	418
Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser	
110 115 120	

<210> 28

<211> 139

<212> PRT

<213> Artificial Sequence

<220> DNA coding for humanized H chain V region(version g)
of anti-HM1.24 antibody

<223>

<400> 28

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Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
                        -15                -10                -5
Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
        -1  1                5                10
Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
        15                20                25
Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Arg Pro Gly Gln Gly Leu
        30                35                40                45
Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
                50                55                60
Gln Lys Phe Lys Gly Arg Val Thr Met Thr Ala Asp Thr Ser Thr Ser
                65                70                75
Thr Val Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
        80                85                90
Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
        95                100                105
Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
110                115                120

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<210> 29

<211> 418

<212> DNA

<213> Artificial Sequence

<220> DNA coding for humanized H chain V region(version h)
of anti-HM1.24 antibody

<223>

<400> 29

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atg gac tgg acc tgg agg gtc ttc ttc ttg ctg gct gta gct cca ggt      48
Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
                        -15                -10                -5
gct cac tcc cag gtg cag ctg gtg cag tct ggg gct gag gtg aag aag      96
Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
        -1  1                5                10

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cct ggg gcc tca gtg aag gtt tcc tgc aag gca tct gga tac acc ttc      144
Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
    15                20                25

act ccc tac tgg atg cag tgg gtg cga cag gcc cct gga caa ggg ctt      192
Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
    30                35                40                45

gag tgg atg gga tct att ttt cct gga gat ggt gat act agg tac agt      240
Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
                50                55                60

cag aag ttc aag ggc aaa gtc acc atg acc gca gac acg tcc tcg agc      288
Gln Lys Phe Lys Gly Lys Val Thr Met Thr Ala Asp Thr Ser Ser Ser
                65                70                75

aca gcc tac atg gag ctg agc agc ctg aga tct gag gac acg gcc gtg      336
Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
                80                85                90

tat tac tgt gcg aga gga tta cga cga ggg ggg tac tac ttt gac tac      384
Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
                95                100                105

tgg ggg caa ggg acc acg gtc acc gtc tcc tca g      418
Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
110                115                120

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<210>    30
<211>    239
<212>    PRT
<213>    Artificer Sequence

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<220>    Humanized H chain V region(version h) of anti-HM1.24
          antibody

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<223>

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<400>    30
Met Asp Trp Thr Trp Arg Val Phe Phe Leu Ala Val Ala Pro Gly
                -15                -10                -5
Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
                -1    1                5                10
Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
    15                20                25

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Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 30 35 40 45
 Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60
 Gln Lys Phe Lys Gly Lys Val Thr Met Thr Ala Asp Thr Ser Ser Ser
 65 70 75
 Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
 80 85 90
 Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105
 Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120

<210> 31
 <211> 418
 <212> DNA
 <213> Artificial Sequence -
 <220> DNA coding for humanized H chain V region(version i)
 of anti-HM1.24 antibody

<223>

<400> 31
 atg gac tgg acc tgg agg gtc ttc ttc ttg ctg gct gta gct cca ggt 48
 Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
 -15 -10 -5
 gct cac tcc cag gtg cag ctg gtg cag tot ggg gct gag gtg aag aag 96
 Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10
 cct ggg gcc tca gtg aag gtt tcc tgc aag gca tct gga tac acc ttc 144
 Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25
 act ccc tac tgg atg cag tgg gtg cga cag gcc cct gga caa ggg ctt 192
 Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 30 35 40 45
 gag tgg atg gga tct att ttt cct gga gat ggt gat act agg tac agt 240
 Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60

cag aag ttc aag ggc aaa gtc acc atg acc gca gac acg tcc tcc agc 288
 Gln Lys Phe Lys Gly Lys Val Thr Met Thr Ala Asp Thr Ser Ser Ser
 65 70 75
 aca gcc tac atg gag ctg agc agc ctg gca ttt gag gac acg gcc gtg 336
 Thr Ala Tyr Met Glu Leu Ser Ser Leu Ala Phe Glu Asp Thr Ala Val
 80 85 90
 tat tac tgt gcg aga gga tta cga cga ggg ggg tac tac ttt gac tac 384
 Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105
 tgg ggg caa ggg acc acg gtc acc gtc tcc tca g 418
 Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120

<210> 32
 <211> 139
 <212> PRT
 <213> Artificial Sequence -

 <220> Humanized H chain V region(version i) of anti-HM1.24
 antibody
 <223>

<400> 32
 Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
 -15 -10 -5
 Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10
 Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25
 Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 30 35 40 45
 Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60
 Gln Lys Phe Lys Gly Lys Val Thr Met Thr Ala Asp Thr Ser Ser Ser
 65 70 75
 Thr Ala Tyr Met Glu Leu Ser Ser Leu Ala Phe Glu Asp Thr Ala Val
 80 85 90

Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105
 Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120

<210> 33
 <211> 418
 <212> DNA
 <213> Artificial Sequence

<220> DNA coding for humanized H chain V region(version j)
 of anti-HM1.24 antibody

<223>

<400> 33
 atg gac tgg acc tgg agg gtc ttc ttc ttg ctg gct gta gct cca ggt 48
 Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
 -15 -10 -5
 gct cac tcc cag gtg cag ctg gtg cag tct ggg gct gag gtg aag aag 96
 Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10
 cct ggg gcc tca gtg aag gtt tcc tgc aag gca tct gga tac acc ttc 144
 Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25
 act ccc tac tgg atg cag tgg gtg cga cag gcc cct gga caa ggg ctt 192
 Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 30 35 40 45
 gag tgg atg gga tct att ttt cct gga gat ggt gat act agg tac agt 240
 Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60
 cag aag ttc aag ggc aaa gcc acc ctg act gca gac acg tcc tcg agc 288
 Gln Lys Phe Lys Gly Lys Ala Thr Leu Thr Ala Asp Thr Ser Ser Ser
 65 70 75
 aca gcc tac atg gag ctg agc agc ctg aga tct gag gac acg gcc gtg 336
 Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
 80 85 90

tat tac tgt gcg aga gga tta cga cga ggg ggg tac tac ttt gac tac 384
 Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105

tgg ggg caa ggg acc acg gtc acc gtc tcc tca g 418
 Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120

<210> 34
 <211> 139
 <212> PRT
 <213> Artificial Sequence

<220> Humanized H chain V region(version j) of anti-HM1.24
 antibody

<223>

<400> 34
 Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
 -15 -10 -5
 Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10
 Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25
 Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 30 35 40 45
 Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60
 Gln Lys Phe Lys Gly Lys Ala Thr Leu Thr Ala Asp Thr Ser Ser Ser
 65 70 75
 Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
 80 85 90
 Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105
 Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120

<210> 35
 <211> 418

<212> DNA

<213> Artificial Sequence

<220> DNA coding for H chain V region(version k) of
anti-HM1.24 antibody

<223>

<400> 35

atg gac tgg acc tgg agg gtc ttc ttc ttg ctg gct gta gct cca ggt 48
Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
-15 -10 -5
gct cac tcc cag gtg cag ctg gtg cag tct ggg gct gag gtg aag aag 96
Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
-1 1 5 10
cct ggg gcc tca gtg aag gtt tcc tgc aag gca tct gga tac acc ttc 144
Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
15 20 25
act ccc tac tgg atg cag tgg gtg cga cag gcc cct gga caa ggg ctt 192
Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
30 35 40 45
gag tgg atg gga tct att ttt cct gga gat ggt gat act agg tac agt 240
Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
50 55 60
cag aag ttc aag ggc aaa gtc acc atg acc gca gac acg tcc tcg agc 288
Gln Lys Phe Lys Gly Lys Val Thr Met Thr Ala Asp Thr Ser Ser Ser
65 70 75
aca gcc tac atg cag ctg agc agc cta aga tct gag gac acg gcc gtg 336
Thr Ala Tyr Met Gln Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
80 85 90
tat tac tgt gcg aga gga tta cga cga ggg ggg tac tac ttt gac tac 384
Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
95 100 105
tgg ggg caa ggg acc acg gtc acc gtc tcc tca g 418
Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
110 115 120

<210> 36

<211> 139

<212> PRT
 <213> Artificial Seam
 <220> Humanized H chain V region(version k) of anti-HM1.24
 antibody
 <223>

<400> 36
 Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
 -15 -10 -5
 Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10
 Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25
 Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 30 35 40 45
 Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60
 Gln Lys Phe Lys Gly Lys Val Thr Met Thr Ala Asp Thr Ser Ser Ser
 65 70 75
 Thr Ala Tyr Met Gln Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
 80 85 90
 Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105
 Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120

<210> 37
 <211> 418
 <212> DNA
 <213> Artificial Sequence
 <220> DNA coding for humanized H chain V region(version l)
 of anti-HM1.24 antibody
 <223>
 <400> 37

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atg gac tgg acc tgg agg gtc ttc ttc ttg ctg gct gta gct cca ggt	48
Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly	
-15 -10 -5	
gct cac tcc cag gtg cag ctg gtg cag tct ggg gct gag gtg aag aag	96
Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys	
-1 1 5 10	
cct ggg gcc tca gtg aag gtt tcc tgc aag gca tct gga tac acc ttc	144
Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe	
15 20 25	
act ccc tac tgg atg cag tgg gtg cga cag gcc cct gga caa ggg ctt	192
Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu	
30 35 40 45	
gag tgg atg gga tct att ttt cct gga gat ggt gat act agg tac agt	240
Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser	
50 55 60	
cag aag ttc aag ggc aaa gtc acc atg acc gca gac acg tcc tcg agc	288
Gln Lys Phe Lys Gly Lys Val Thr Met Thr Ala Asp Thr Ser Ser Ser	
65 70 75	
aca gcc tac atg cag ctg agc atc ctg aga tct gag gac acg gcc gtg	336
Thr Ala Tyr Met Gln Leu Ser Ile Leu Arg Ser Glu Asp Thr Ala Val	
80 85 90	
tat tac tgt gcg aga gga tta cga cga ggg ggg tac tac ttt gac tac	384
Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr	
95 100 105	
tgg ggg caa ggg acc acg gtc acc gtc tcc tca g	418
Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser	
110 115 120	

<210> 38

<211> 139

<212> PRT

<213> Artificial Sequence

<220> Humanized H chain V region(version 1) of anti-HM1.24 antibody

<223>

<400> 38

Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
 -15 -10 -5
 Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10
 Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25
 Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 30 35 40 45
 Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60
 Gln Lys Phe Lys Gly Lys Val Thr Met Thr Ala Asp Thr Ser Ser Ser
 65 70 75
 Thr Ala Tyr Met Gln Leu Ser Ile Leu Arg Ser Glu Asp Thr Ala Val
 80 85 90
 Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105
 Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120

<210> 39

<211> 418

<212> DNA

<213> Artificial Sequence

<220> DNA coding for humanized H chain V region(version m)
 of anti-HM1.24 antibody

<223>

<400> 39

atg gac tgg acc tgg agg gtc ttc ttc ttg ctg gct gta gct cca ggt 48
 Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
 -15 -10 -5
 gct cac tcc cag gtg cag ctg gtg cag tct ggg gct gag gtg aag aag 96
 Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10
 cct ggg gcc tca gtg aag gtt tcc tgc aag gca tct gga tac acc ttc 144
 Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25

act ccc tac tgg atg cag tgg gtg cga cag gcc cct gga caa ggg ctt 192
 Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 30 35 40 45
 gag tgg atg gga tct att ttt cct gga gat ggt gat act agg tac agt 240
 Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60
 cag aag ttc aag ggc aaa gtc acc atg acc gca gac acg tcc tcg agc 288
 Gln Lys Phe Lys Gly Lys Val Thr Met Thr Ala Asp Thr Ser Ser Ser
 65 70 75
 aca gcc tac atg cag ctg agc atc ctg aga tct gag gac tcg gcc gtg 336
 Thr Ala Tyr Met Gln Leu Ser Ile Leu Arg Ser Glu Asp Ser Ala Val
 80 85 90
 tat tac tgt gcg aga gga tta cga cga ggg ggg tac tac ttt gac tac 384
 Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105
 tgg ggg caa ggg acc acg gtc acc gtc tcc tca g 418
 Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120

<210> 40
 <211> 139
 <212> PRT
 <213> Artificial Sequence
 <220> Humanized H chain V region(version m) of anti-HM1.24
 antibody
 <223>

<400> 40
 Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
 -15 -10 -5
 Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10
 Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25
 Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 30 35 40 45

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Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
50 55 60
Gln Lys Phe Lys Gly Lys Val Thr Met Thr Ala Asp Thr Ser Ser Ser
65 70 75
Thr Ala Tyr Met Gln Leu Ser Ile Leu Arg Ser Glu Asp Ser Ala Val
80 85 90
Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
95 100 105
Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
110 115 120

<210> 41

<211> 418

<212> DNA

<213> Artificial Sequence

<220> DNA coding for humanized H chain V region(version n)
of anti-HM1.24 antibody

<223>

<400> 41

atg gac tgg acc tgg agg gtc ttc ttc ttg ctg gct gta gct cca ggt 48
Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
-15 -10 -5
gct cac tcc cag gtg cag ctg gtg cag tct ggg gct gag gtg aag aag 96
Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
-1 1 5 10
cct ggg gcc tca gtg aag gtt tcc tgc aag gca tct gga tac acc ttc 144
Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
15 20 25
act ccc tac tgg atg cag tgg gtg cga cag gcc cct gga caa ggg ctt 192
Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
30 35 40 45
gag tgg atg gga tct att ttt cct gga gat ggt gat act agg tac agt 240
Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
50 55 60

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cag aag ttc aag ggc aaa gtc acc atg acc gca gac acg tcc tcg agc 288
 Gln Lys Phe Lys Gly Lys Val Thr Met Thr Ala Asp Thr Ser Ser Ser
 65 70 75
 aca gcc tac atg gag ctg agc atc ctg aga tct gag gac acg gcc gtg 336
 Thr Ala Tyr Met Glu Leu Ser Ile Leu Arg Ser Glu Asp Thr Ala Val
 80 85 90
 tat tac tgt gcg aga gga tta cga cga ggg ggg tac tac ttt gac tac 384
 Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105
 tgg ggg caa ggg acc acg gtc acc gtc tcc tca g 418
 Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120

<210> 42
 <211> 139
 <212> PRT
 <213> Artificial Sequence -

<220> Humanized H chain V region(version n) of anti-HM1.24
 antibody

<223>

<400> 42
 Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
 -15 -10 -5
 Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10
 Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25
 Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 30 35 40 45
 Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60
 Gln Lys Phe Lys Gly Lys Val Thr Met Thr Ala Asp Thr Ser Ser Ser
 65 70 75
 Thr Ala Tyr Met Glu Leu Ser Ile Leu Arg Ser Glu Asp Thr Ala Val
 80 85 90

Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105
 Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120

<210> 43
 <211> 418
 <212> DNA
 <213> Artificial Sequence

<220> DNA coding for humanized H chain V region(version o)
 of anti-HM1.24 antibody

<223>

<400> 43
 atg gac tgg acc tgg agg gtc ttc ttc ttg ctg gct gta gct cca ggt 48
 Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
 -15 -10 -5
 gct cac tcc cag gtg cag ctg gtg cag tct ggg gct gag gtg aag aag 96
 Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10
 cct ggg gcc tca gtg aag gtt tcc tgc aag gca tct gga tac acc ttc 144
 Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25
 act ccc tac tgg atg cag tgg gtg cga cag gcc cct gga caa ggg ctt 192
 Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 30 35 40 45
 gag tgg atg gga tct att ttt cct gga gat ggt gat act agg tac agt 240
 Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60
 cag aag ttc aag ggc aaa gtc acc atg acc gca gac acg tcc tcg agc 288
 Gln Lys Phe Lys Gly Lys Val Thr Met Thr Ala Asp Thr Ser Ser Ser
 65 70 75
 aca gcc tac atg gag ctg agc agc ctg aga tct gag gac tcg gcc gta 336
 Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Ser Ala Val
 80 85 90

tat tac tgt gcg aga gga tta cga cga ggg ggg tac tac ttt gac tac 384
 Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105

tgg ggg caa ggg acc acg gtc acc gtc tcc tca g 418
 Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120

<210> 44
 <211> 139
 <212> PRT
 <213> Artificial Sequence

<220> Humanized H chain V region(version o) of anti-HM1.24
 antibody

<223>

<400> 44
 Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
 -15 -10 -5
 Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10
 Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25
 Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 30 35 40 45
 Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60
 Gln Lys Phe Lys Gly Lys Val Thr Met Thr Ala Asp Thr Ser Ser Ser
 65 70 75
 Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Ser Ala Val
 80 85 90
 Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105
 Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120

<210> 45
 <211> 418

00222E"86060960

<212> DNA

<213> Artificial Sequence

<220> DNA coding for humanized H chain V region(version p)
of anti-HM1.24 antibody

<223>

<400> 45

atg gac tgg acc tgg agg gtc ttc ttc ttg ctg gct gta gct cca ggt 48
Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
-15 -10 -5
gct cac tcc cag gtg cag ctg gtg cag tct ggg gct gag gtg aag aag 96
Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
-1 1 5 10
cct ggg gcc tca gtg aag gtt tcc tgc aag gca tct gga tac acc ttc 144
Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
15 20 25
act ccc tac tgg atg cag tgg gtg cga cag gcc cct gga caa ggg ctt 192
Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
30 35 40 45
gag tgg atg gga tct att ttt cct gga gat ggt gat act agg tac agt 240
Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
50 55 60
cag aag ttc aag ggc aga gtc acc atg acc gca gac acg tcc acg agc 288
Gln Lys Phe Lys Gly Arg Val Thr Met Thr Ala Asp Thr Ser Thr Ser
65 70 75
aca gcc tac atg gag ctg agc agc ctg aga tct gag gac acg gcc gtg 336
Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
80 85 90
tat tac tgt gcg aga gga tta cga cga ggg ggg tac tac ttt gac tac 384
Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
95 100 105
tgg ggg caa ggg acc acg gtc acc gtc tcc tca g 418
Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
110 115 120

<210> 46

<211> 139

002220" 86060560

<212> PRT
<213> Artificial Sequence

<220> Humanized H chain V region(version p) of anti-HM1.24 antibody
<223>

<400> 46
Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
 -15 -10 -5
Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10
Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25
Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 30 35 40 45
Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60
Gln Lys Phe Lys Gly Arg Val Thr Met Thr Ala Asp Thr Ser Thr Ser
 65 70 75
Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
 80 85 90
Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105
Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
110 115 120

<210> 47
<211> 418
<212> DNA
<213> Artificial Sequence

<220> DNA coding for humanized H chain V region(version p)
 of anti-HM1.24 antibody
<223>

<400> 47

atg gac tgg acc tgg agg gtc ttc ttc ttg ctg gct gta gct cca ggt	48
Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly	
-15 -10 -5	
gct cac tcc cag gtg cag ctg gtg cag tct ggg gct gag gtg aag aag	96
Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys	
-1 1 5 10	
cct ggg gcc tca gtg aag gtt tcc tgc aag gca tct gga tac acc ttc	144
Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe	
15 20 25	
act ccc tac tgg atg cag tgg gtg cga cag gcc cct gga caa ggg ctt	192
Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu	
30 35 40 45	
gag tgg atg gga tct att ttt cct gga gat ggt gat act agg tac agt	240
Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser	
50 55 60	
cag aag ttc aag ggc aga gtc acc atg acc gca gac acg tcc tcg agc	288
Gln Lys Phe Lys Gly Arg Val Thr Met Thr Ala Asp Thr Ser Ser Ser	
65 70 75	
aca gtc tac atg gag ctg agc agc ctg aga tct gag gac acg gcc gtg	336
Thr Val Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val	
80 85 90	
tat tac tgt gcg aga gga tta cga cga ggg ggg tac tac ttt gac tac	384
Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr	
95 100 105	
tgg ggg caa ggg acc acg gtc acc gtc tcc tca g	418
Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser	
110 115 120	

<210> 48

<211> 139

<212> PRT

<213> Artificial Sequence

<220> Humanized H chain V region(version p) of anti-HM1.24 antibody

<223>

<400> 48

002220" 86060560

Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
 -15 -10 -5
 Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10
 Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25
 Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 30 35 40 45
 Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60
 Gln Lys Phe Lys Gly Arg Val Thr Met Thr Ala Asp Thr Ser Ser Ser
 65 70 75
 Thr Val Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
 80 85 90
 Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105
 Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120

<210> 49
 <211> 418
 <212> DNA
 <213> Artificial Sequence
 <220> DNA coding for humanized H chain V region(version r)
 of anti-HM1.24 antibody
 <223>

<400> 49
 atg gac tgg acc tgg agg gtc ttc ttc ttg ctg gct gta gct cca ggt 48
 Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
 -15 -10 -5
 gct cac tcc cag gtg cag ctg gtg cag tct ggg gct gag gtg aag aag 96
 Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10
 cct ggg gcc tca gtg aag gtt tcc tgc aag gca tct gga tac acc ttc 144
 Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25

act ccc tac tgg atg cag tgg gtg cga cag gcc cct gga caa ggg ctt 192
 Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 30 35 40 45
 gag tgg atg gga tct att ttt cct gga gat ggt gat act agg tac agt 240
 Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60
 cag aag ttc aag ggc aga gtc acc atg acc gca gac aag tcc acg agc 288
 Gln Lys Phe Lys Gly Arg Val Thr Met Thr Ala Asp Lys Ser Thr Ser
 65 70 75
 aca gcc tac atg gag ctg agc agc ctg aga tct gag gac acg gcc gtg 336
 Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
 80 85 90
 tat tac tgt gcg aga gga tta cga cga ggg ggg tac tac ttt gac tac 384
 Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105
 tgg ggg caa ggg acc acg gtc acc gtc tcc tca g 418
 Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120

<210> 50
 <211> 139
 <212> PRT
 <213> Artificial Sequence

<220> Humanized H chain V region(version r) of anti-HM1.24
 antibody

<223>

<400> 50
 Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
 -15 -10 -5
 Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10
 Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25
 Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 30 35 40 45

Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60
 Gln Lys Phe Lys Gly Arg Val Thr Met Thr Ala Asp Lys Ser Thr Ser
 65 70 75
 Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
 80 85 90
 Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105
 Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120

<210> 51
 <211> 40
 <212> DNA
 <213> Artificial Sequence

<220> Primer
 <223> Synthetic DNA

<400> 51
 actagtcgac atgaagttgc ctgtaggct gttggtgctg

40

<210> 52
 <211> 39
 <212> DNA
 <213> Artificial Sequence

<220> Primer
 <223> Synthetic DNA

<400> 52
 actagtcgac atggagwcag acacactcct gytatgggt

39

<210> 53
 <211> 40
 <212> DNA
 <213> Artificial Sequence

<220> Primer
<223> Synthetic DNA

<400> 53
actagtcgac atgagtgtgc tcactcaggt cctggsgettg

40

<210> 54
<211> 43
<212> DNA
<213> Artificial Sequence

<220> Primer
<223> Synthetic DNA

<400> 54
actagtcgac atgaggrccc ctgctcagwt tyttggmwtc ttg

43

<210> 55
<211> 40
<212> DNA
<213> Artificial Sequence

<220> Primer
<223> Synthetic DNA

<400> 55
actagtcgac atggatttwc aggtgcagat twtcagcttc

40

<210> 56
<211> 37
<212> DNA
<213> Artificial Sequence

<220> Primer
<223> Synthetic DNA

<400> 56
actagtcgac atgaggtkcy ytgysagyt yctgrgg

37

<210> 57
<211> 41
<212> DNA
<213> Artificial Sequence

<220> Primer
<223> Synthetic DNA

<400> 57
actagtcgac atgggcwtca agatggagtc acakwyycw g

41

<210> 58
<211> 41
<212> DNA
<213> Artificial Sequence

<220> Primer
<223> Synthetic DNA

<400> 58
actagtcgac atgtggggay ctktttycmm tttttcaatt g

41

<210> 59
<211> 35
<212> DNA
<213> Artificial Sequence

<220> Primer
<223> Synthetic DNA

<400> 59
actagtcgac atggtrtccw casctcagtt ccttg

35

<210> 60
<211> 37
<212> DNA
<213> Artificial Sequence

<220> Primer
<223> Synthetic DNA

<400> 60
actagtcgac atgtatatat gtttggtgtc tattttot

37

<210> 61
<211> 38
<212> DNA
<213> Artificial Sequence

<220> Primer
<223> Synthetic DNA

<400> 61
actagtcgac atggaagccc cagctcagct tctctttcc

38

<210> 62
<211> 27
<212> DNA
<213> Artificial Sequence

<220> Primer
<223> Synthetic DNA

<400> 62
ggatcccggg tggatggtgg gaagatg

27

<210> 63
<211> 25

<212> DNA
<213> Artificial Sequence

<220> Primer
<223> Synthetic DNA

<400> 63
tagagtcacc gaggagccag ttgta

25

<210> 64
<211> 26
<212> DNA
<213> Artificial Sequence

<220> Primer
<223> Synthetic DNA

<400> 64
ggatcccggg agtggataga ccgatg

26

<210> 65
<211> 34
<212> DNA
<213> Artificial Sequence

<220> Primer
<223> Synthetic DNA

<400> 65
gataagcttc caccatgggc ttcaagatgg agtc

34

<210> 66
<211> 34
<212> DNA
<213> Artificial Sequence

<220> Primer
<223> Synthetic DNA

<400> 66
gataagcttc caccatggaa tgtaactgga tact

34

<210> 67
<211> 34
<212> DNA
<213> Artificial Sequence

<220> Primer
<223> Synthetic DNA

<400> 67
ggcggatcca ctcacgtttt atttccaact ttgt

34

<210> 68
<211> 34
<212> DNA
<213> Artificial Sequence

<220> Primer
<223> Synthetic DNA

<400> 68
ggcggatcca ctcacctgag gagactgtga gagt

34

<210> 69
<211> 18
<212> DNA
<213> Artificial Sequence

<220> Primer
<223> Synthetic DNA

002220"86060560

<400> 69
cagacagtgg ttcaaagt

18

<210> 70
<211> 26
<212> DNA
<213> Artificial Sequence

<220> Primer
<223> Synthetic DNA

<400> 70
gaattcggat ccactcacgt ttgatt

26

<210> 71
<211> 48
<212> DNA
<213> Artificial Sequence

<220> Primer
<223> Synthetic DNA

<400> 71
agtcaggatg tgaatactgc ttagcctgg taccagcaga agccagga

48

<210> 72
<211> 39
<212> DNA
<213> Artificial Sequence

<220> Primer
<223> Synthetic DNA

<400> 72
gcaccaacc ggtacactgg tgtgcccaagc agattcagc

39

002220" 86060560

<210> 73
<211> 45
<212> DNA
<213> Artificial Sequence

<220> Primer
<223> Synthetic DNA

<400> 73
caacattata gtactccatt cacgttcggc caagggacca aggtg

45

<210> 74
<211> 47
<212> DNA
<213> Artificial Sequence

<220> Primer
<223> Synthetic DNA

<400> 74
gcagatttca catcctgact ggccttacag gtgatgggtca ctctgtc

47

<210> 75
<211> 38
<212> DNA
<213> Artificial Sequence

<220> Primer
<223> Synthetic DNA

<400> 75
acaccagtgt accggttgga tgccgagtag atcagcag

38

<210> 76
<211> 41
<212> DNA

002220" 86060560

<213> Artificial Sequence

<220> Primer

<223> Synthetic DNA

<400> 76

gtgaatggag tactataatg ttgctggcag tagtaggtag c

41

<210> 77

<211> 31

<212> DNA

<213> Artificial Sequence

<220> Primer

<223> Synthetic DNA

<400> 77

ggtaccgact acaccttcac catcagcagc c

31

<210> 78

<211> 31

<212> DNA

<213> Artificial Sequence

<220> Primer

<223> Synthetic DNA

<400> 78

ggtgaagggtg tagtcggtac cgctaccgct a

31

<210> 79

<211> 144

<212> DNA

<213> Artificial Sequence

<220> Primer

<223> Synthetic DNA

<400> 79

atgccttgca ggaaaccttc actgaggccc cagccttctt cacctoagcc ccagactgca 60
ccagctgcac ctgggagtga gcacctggag ctacagccag caagaagaag acctccagg 120
tccagtccat ggtggaagct tatc 144

<210> 80

<211> 130

<212> DNA

<213> Artificial Sequence

<220> Primer

<223> Synthetic DNA

<400> 80

tcagtgaagg tttcctgcaa ggcactctgga tacaccttca ctccctactg gatgcagtgg 60
gtgcgacagg cccctggaca agggcttgag tggatgggat ctatttttcc tggagatggt 120
gatactaggt 130

<210> 81

<211> 131

<212> DNA

<213> Artificial Sequence

<220> Primer

<223> Synthetic DNA

<400> 81

aatacacggc cgtgtcctca gatctcaggc tgctcagctc catgtagact gtgctcgtgg 60
acgtgtctgc ggtcatggtg actctgccct tgaacttctg actgtaccta gtatcaccat 120
ctccaggaaa a 131

<210> 82

<211> 119

<212> DNA

<213> Artificial Sequence

<220> Primer

<223> Synthetic DNA

<400> 82

gagatctgag gacacggccg tgtattactg tgogagagga ttacgacgag gggggtacta 60

ctttgactac tgggggcaag ggaccacggt caccgtctcc tcaggtgagt ggatccgac 119

<210> 83

<211> 25

<212> DNA

<213> Artificial Sequence

<220> Primer

<223> Synthetic DNA

<400> 83

gataagcttc caccatggac tggac 25

<210> 84

<211> 25

<212> DNA

<213> Artificial Sequence

<220> Primer

<223> Synthetic DNA

<400> 84

gtcggatcca ctcacctgag gagac 25

<210> 85

<211> 26

<212> DNA

<213> Artificial Sequence

<220> Primer

002220" 86060560

002220-86060560

<223> Synthetic DNA

<400> 85

aagttcaagg gcaaagtcac catgac

26

<210> 86

<211> 26

<212> DNA

<213> Artificial Sequence

<220> Primer

<223> Synthetic DNA

<400> 86

gtcatggtga ctttgccott gaactt

26

<210> 87

<211> 26

<212> DNA

<213> Artificial Sequence

<220> Primer

<223> Synthetic DNA

<400> 87

atgaccgcag acaagtccac gagcac

26

<210> 88

<211> 26

<212> DNA

<213> Artificial Sequence

<220> Primer

<223> Synthetic DNA

<400> 88

gtgctcgtgg acttgtctgc ggtcat

26

<210> 89

<211> 47

<212> DNA

<213> Artificial Sequence

<220> Primer

<223> Synthetic DNA

<400> 89

aagttcaagg gcaaagtcac catgaccgca gacaagtcca cgagcac

47

<210> 90

<211> 47

<212> DNA

<213> Artificial Sequence

<220> Primer

<223> Synthetic DNA

<400> 90

gtgctcgtgg acttgtctgc ggtcatggtg actttgccct tgaactt

47

<210> 91

<211> 38

<212> DNA

<213> Artificial Sequence

<220> Primer

<223> Synthetic DNA

<400> 91

aagttcaagg gcagagccac cctgaccgca gacacgtc

38

<210> 92

002220" 86050560

<211> 38
<212> DNA
<213> Artificial Sequence

<220> Primer
<223> Synthetic DNA

<400> 92
gacgtgtctg cggtcagggt ggctctgccc ttgaactt

38

<210> 93
<211> 18
<212> DNA
<213> Artificial Sequence

<220> Primer
<223> Synthetic DNA

<400> 93
cagacagtgg ttcaaagt

18

<210> 94
<211> 17
<212> DNA
<213> Artificial Sequence

<220> Primer
<223> Synthetic DNA

<400> 94
gccccaaagc caaggtc

17

<210> 95
<211> 23
<212> DNA
<213> Artificial Sequence

<220> Primer
<223> Synthetic DNA

<400> 95
atttttctctg gagatggtga tac

23

<210> 96
<211> 23
<212> DNA
<213> Artificial Sequence

<220> Primer
<223> Synthetic DNA

<400> 96
gtatcaccat ctccaggaaa tat

23

<210> 97
<211> 418
<212> DNA
<213> Artificial Sequence

<220> DNA coding for humanized H chain V region(native/version a mix) of anti-HM1.24 antibody
<223>

<400> 97
atg gaa tgt aac tgg ata ctt cct ttt att ctg tca gta act tca ggt 48
Met Glu Cys Asn Trp Ile Leu Pro Phe Ile Leu Ser Val Thr Ser Gly
-15 -10 -5
gcc tac tca cag gtt caa ctc cag cag tct ggg gct gag ctg gca aga 96
Ala Tyr Ser Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Ala Arg
-1 1 5 10

cct ggg gct tca gtg aag ttg tcc tgc aag gct tct ggc tac acc ttt	144
Pro Gly Ala Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe	
15 20 25	
act ccc tac tgg atg cag tgg gta aaa cag agg cct gga cag ggt ctg	192
Thr Pro Tyr Trp Met Gln Trp Val Lys Gln Arg Pro Gly Gln Gly Leu	
30 35 40 45	
gaa tgg att ggg tct att ttt cct gga gat ggt gat act agg tac agt	240
Glu Trp Ile Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser	
50 55 60	
cag aag ttc aag ggc aga gtc acc atg acc gca gac acg tcc acg agc	288
Gln Lys Phe Lys Gly Arg Val Thr Met Thr Ala Asp Thr Ser Thr Ser	
65 70 75	
aca gtc tac atg gag ctg agc agc ctg aga tct gag gac acg gcc gtg	336
Thr Val Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val	
80 85 90	
tat tac tgt gcg aga gga tta cga cga ggg ggg tac tac ttt gac tac	384
Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr	
95 100 105	
tgg ggg caa ggg acc acg gtc acc gtc tcc tca g	418
Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser	
110 115 120	

<210> 98
 <211> 139
 <212> PRT
 <213> Artificial Sequence

<220> Humanized H chain V region(native/version a mix) of
 anti-HM1.24 antibody

<223>

<400> 98
 Met Glu Cys Asn Trp Ile Leu Pro Phe Ile Leu Ser Val Thr Ser Gly
 -15 -10 -5
 Ala Tyr Ser Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Ala Arg
 -1 1 5 10
 Pro Gly Ala Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25

Thr Pro Tyr Trp Met Gln Trp Val Lys Gln Arg Pro Gly Gln Gly Leu
 30 35 40 45
 Glu Trp Ile Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60
 Gln Lys Phe Lys Gly Arg Val Thr Met Thr Ala Asp Thr Ser Thr Ser
 65 70 75
 Thr Val Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
 80 85 90
 Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105
 Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120

<210> 99

<211> 418

<212> DNA

<213> Artificial Sequence -

<220> DNA coding for humanized C chain V region(native/version a mix) of anti-HM1.24 antibody

<223>

<400> 99

atg gac tgg acc tgg agg gtc ttc ttc ttg ctg gct gta gct cca ggt 48
 Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
 -15 -10 -5
 gct cac tcc cag gtg cag ctg gtg cag tct ggg gct gag gtg aag aag 96
 Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10
 cct ggg gcc tca gtg aag gtt tcc tgc aag gca tct gga tac acc ttc 144
 Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25
 act ccc tac tgg atg cag tgg gtg cga cag gcc cct gga caa ggg ctt 192
 Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 30 35 40 45
 gag tgg atg gga tct att ttt cct gga gat ggt gat act agg tac agt 240
 Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60

cag aag ttc aag ggc aag gcc aca ttg act gca gat aaa tcc tcc agt 288
 Gln Lys Phe Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser
 65 70 75
 .aca gcc tac atg caa ctc agc atc ttg gca ttt gag gac tct gcg gtc 336
 Thr Ala Tyr Met Gln Leu Ser Ile Leu Ala Phe Glu Asp Ser Ala Val
 80 85 90
 tat tac tgt gca aga gga tta cga cga ggg ggg tac tac ttt gac tac 384
 Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105
 tgg ggc caa ggc acc act ctc aca gtc tcc tca g 418
 Trp Gly Gln Gly Thr Thr Leu Thr Val Ser Ser
 110 115 120

<210> 100
 <211> 139
 <212> PRT
 <213> Artificial Sequence -

<220> Humanized C chain V region(native/version a mix) of
 anti-HM1.24 antibody

<223>

<400> 100

Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
 -15 -10 -5
 Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10
 Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25
 Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 30 35 40 45
 Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60
 Gln Lys Phe Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser
 65 70 75
 Thr Ala Tyr Met Gln Leu Ser Ile Leu Ala Phe Glu Asp Ser Ala Val
 80 85 90

Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105
 Trp Gly Gln Gly Thr Thr Leu Thr Val Ser Ser
 110 115 120

<210> 101
 <211> 38
 <212> DNA
 <213> Artificial Sequence

<220> Primer
 <223> Synthetic DNA

<400> 101
 ctggttcggc ccacctctga aggttcaga atcgatag

38

<210> 102
 <211> 35
 <212> DNA
 <213> Artificial Sequence

<220> Primer
 <223> Synthetic DNA

<400> 102
 gcagacacgt cctcgagcac agcctacatg gagct

35

<210> 103
 <211> 35
 <212> DNA
 <213> Artificial Sequence

<220> Primer
 <223> Synthetic DNA

<400> 103
 agtccatgt aggctgtgct cgaggacgtg tctgc

35

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<210> 104
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220> Primer
 <223> Synthetic DNA

<400> 104
 tgggtgacgac agcgccctgg acaagg

26

<210> 105
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220> Primer
 <223> Synthetic DNA

<400> 105
 ccttgtccag ggcgctgtcg caccca

26

<210> 106
 <211> 41
 <212> DNA
 <213> Artificial Sequence

<220> Primer
 <223> Synthetic DNA

<400> 106
 tacatggagc tgagcagcct ggcatttgag gacacggccg t

41

<210> 107
 <211> 41

<212> DNA
<213> Artificial Sequence

<220> Primer
<223> Synthetic DNA

<400> 107
acggccgtgt cctcaaatgc caggctgctc agctccatgt a

41

<210> 108
<211> 26
<212> DNA
<213> Artificial Sequence

<220> Primer
<223> Synthetic DNA

<400> 108
aagttcaagg gcaaagccac cctgac

26

<210> 109
<211> 26
<212> DNA
<213> Artificial Sequence

<220> Primer
<223> Synthetic DNA

<400> 109
gtcagggtgg ctttgccctt gaactt

26

<210> 110
<211> 23
<212> DNA
<213> Artificial Sequence

<220> Primer
<223> Synthetic DNA

<400> 110
gcctacatgc agctgagcag cct

23

<210> 111
<211> 23
<212> DNA
<213> Artificial Sequence

<220> Primer
<223> Synthetic DNA

<400> 111
aggctgctca gctgcatgta ggc

23

<210> 112
<211> 38
<212> DNA
<213> Artificial Sequence

<220> Primer
<223> Synthetic DNA

<400> 112
gcctacatgc agctgagcat cctgagatct gaggacac

38

<210> 113
<211> 35
<212> DNA
<213> Artificial Sequence

<220> Primer
<223> Synthetic DNA

<400> 113

gatctcagga tgctcagctg catgtaggct gtgct

35

<210> 114

<211> 50

<212> DNA

<213> Artificial Sequence

<220> Primer

<223> Synthetic DNA

<400> 114

gcctacatgc agctgagcat cctgagatct gaggactcgg ccgtgtatta

50

<210> 115

<211> 50

<212> DNA

<213> Artificial Sequence

<220> Primer

<223> Synthetic DNA

<400> 115

acggccgagt cctcagatct caggatgctc agctgcatgt aggtgtgct

50

<210> 116

<211> 20

<212> DNA

<213> Artificial Sequence

<220> Primer

<223> Synthetic DNA

<400> 116

gagctgagca tcctgagatc

20

002220" 86060560

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<210> 117
<211> 26
<212> DNA
<213> Artificial Sequence

<220> Primer
<223> Synthetic DNA

<400> 117
gatctcagga tgctcagctc catgta

26

<210> 118
<211> 20
<212> DNA
<213> Artificial Sequence

<220> Primer
<223> Synthetic DNA

<400> 118
agatctgagg actcggcgt

20

<210> 119
<211> 20
<212> DNA
<213> Artificial Sequence

<220> Primer
<223> Synthetic DNA

<400> 119
acggccgagt cctcagatct

20

<210> 120
<211> 35
<212> DNA

<213> Artificial Sequence

<220> Primer

<223> Synthetic DNA

<400> 120

gcagacacgt ccacgagcac agcctacatg gagct

35

<210> 121

<211> 35

<212> DNA

<213> Artificial Sequence

<220> Primer

<223> Synthetic DNA

<400> 121

agctccatgt aggctgtgct cgtggacgtg totgc

35

<210> 122

<211> 35

<212> DNA

<213> Artificial Sequence

<220> Primer

<223> Synthetic DNA

<400> 122

gcagacacgt cctcgagcac agtctacatg gagct

35

<210> 123

<211> 35

<212> DNA

<213> Artificial Sequence

<220> Primer

<223> Synthetic DNA

<400> 123

agctccatgt agactgtgct cgaggacgtg tctgc

35

<210> 124

<211> 26

<212> DNA

<213> Artificial Sequence

<220> Primer

<223> Synthetic DNA

<400> 124

agagtcacca tcaccgcaga caagtc

26

<210> 125

<211> 26

<212> DNA

<213> Artificial Sequence

<220> Primer

<223> Synthetic DNA

<400> 125

gacttgctctg cggatgatggt gactct

26

<210> 126

<211> 418

<212> DNA

<213> Artificial Sequence

<220> DNA coding for humanized H chain V region(version s)
of HM1.24 antibody

<223>

<400> 126

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atg gac tgg acc tgg agg gtc ttc ttc ttg ctg gct gta gct cca ggt      48
Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
      -15              -10              -5

gct cac tcc cag gtg cag ctg gtg cag tct ggg gct gag gtg aag aag      96
Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
      -1  1              5              10

cct ggg gcc tca gtg aag gtt tcc tgc aag gca tct gga tac acc ttc      144
Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
      15              20              25

act ccc tac tgg atg cag tgg gtg cga cag gcc cct gga caa ggg ctt      192
Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
      30              35              40              45

gag tgg atg gga tct att ttt cct gga gat ggt gat act agg tac agt      240
Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
      50              55              60

cag aag ttc aag ggc aga gtc acc atc acc gca gac aag tcc acg agc      288
Gln Lys Phe Lys Gly Arg Val Thr Ile Thr Ala Asp Lys Ser Thr Ser
      65              70              75

aca gcc tac atg gag ctg agc agc ctg aga tct gag gac acg gcc gtg      336
Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
      80              85              90

tat tac tgt gcg aga gga tta cga cga ggg ggg tac tac ttt gac tac      384
Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
      95              100              105

tgg ggg caa ggg acc acg gtc acc gtc tcc tca g      418
Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
110              115              120

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<210> 127

<211> 139

<212> PRT

<213> Artificial Sequence

<220> Humanized H chain V region(version s) of anti-HM1.24
antibody

<223>

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<400> 127

Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
 -15 -10 -5
 Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10
 Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25
 Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 30 35 40 45
 Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60
 Gln Lys Phe Lys Gly Arg Val Thr Ile Thr Ala Asp Lys Ser Thr Ser
 65 70 75
 Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
 80 85 90
 Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105
 Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120

<210> 128

<211> 1013

<212> DNA

<213> Human

<220> DNA coding for HM1.24 antigenic protein

<223>

<400> 128

gaattcggca cgagggatct gg atg gca tct act tcg tat gac tat tgc 49
 Met Ala Ser Thr Ser Tyr Asp Tyr Cys
 1 5
 aga gtg ccc atg gaa gac ggg gat aag cgc tgt aag ctt ctg ctg ggg 97
 Arg Val Pro Met Glu Asp Gly Asp Lys Arg Cys Lys Leu Leu Leu Gly
 10 15 20 25
 ata gga att ctg gtg ctc ctg atc atc gtg att ctg ggg gtg ccc ttg 145
 Ile Gly Ile Leu Val Leu Leu Ile Ile Val Ile Leu Gly Val Pro Leu
 30 35 40

att atc ttc acc atc aag gcc aac agc gag gcc tgc cgg gac ggc ctt	193
Ile Ile Phe Thr Ile Lys Ala Asn Ser Glu Ala Cys Arg Asp Gly Leu	
45 50 55	
cgg gca gtg atg gag tgt cgc aat gtc acc cat ctc ctg caa caa gag	241
Arg Ala Val Met Glu Cys Arg Asn Val Thr His Leu Leu Gln Gln Glu	
60 65 70	
ctg acc gag gcc cag aag ggc ttt cag gat gtg gag gcc cag gcc gcc	289
Leu Thr Glu Ala Gln Lys Gly Phe Gln Asp Val Glu Ala Gln Ala Ala	
75 80 85	
acc tgc aac cac act gtg atg gcc cta atg gct tcc ctg gat gca gag	337
Thr Cys Asn His Thr Val Met Ala Leu Met Ala Ser Leu Asp Ala Glu	
90 95 100 105	
aag gcc caa gga caa aag aaa gtg gag gag ctt gag gga gag atc act	385
Lys Ala Gln Gly Gln Lys Lys Val Glu Glu Leu Glu Gly Glu Ile Thr	
110 115 120	
aca tta aac cat aag ctt cag gac gcg tct gca gag gtg gag cga ctg	433
Thr Leu Asn His Lys Leu Gln Asp Ala Ser Ala Glu Val Glu Arg Leu	
125 130 135	
aga aga gaa aac cag gtc tta agc gtg aga atc gcg gac aag aag tac	481
Arg Arg Glu Asn Gln Val Leu Ser Val Arg Ile Ala Asp Lys Lys Tyr	
140 145 150	
tac ccc agc tcc cag gac tcc agc tcc gct gcg gcg ccc cag ctg ctg	529
Tyr Pro Ser Ser Gln Asp Ser Ser Ser Ala Ala Ala Pro Gln Leu Leu	
155 160 165	
att gtg ctg ctg ggc ctc agc gct ctg ctg cag tga gatcccagga	575
Ile Val Leu Leu Gly Leu Ser Ala Leu Leu Gln ***	
170 175 180	
agctggcaca tcttgaaggg tccgtcctgc tcggcttttc gcttgaacat tcccttgatc	635
tcatacagttc tgagcgggtc atggggcaac acggttagcg gggagagcac ggggtagccg	695
gagaagggcc tctggagcag gtctggaggg gccatggggc agtcctgggt ctggggacac	755
agtcgggttg acccagggct gtctccctcc agagcctccc tccggacaat gagtcccccc	815
tcttgctccc caccctgaga ttgggcatgg ggtgcggtgt ggggggcatg tgctgcctgt	875
tgttatgggt tttttttgcg gggggggttg cttttttctg ggggtcttga gctccaaaaa	935
aataaacact tcctttgagg gagagcacac cttaaaaaaa aaaaaaaaaa aaaaaaaaaa	995
aaaattcggg cggccgcc	1013

<210> 129

<211> 180

<212> PRT
<213> Human

<220> HM1.24 antigenic protein
<223>

<400> 129

Met Ala Ser Thr Ser Tyr Asp Tyr Cys Arg Val Pro Met Glu Asp Gly
1 5 10 15
Asp Lys Arg Cys Lys Leu Leu Leu Gly Ile Gly Ile Leu Val Leu Leu
20 25 30
Ile Ile Val Ile Leu Gly Val Pro Leu Ile Ile Phe Thr Ile Lys Ala
35 40 45
Asn Ser Glu Ala Cys Arg Asp Gly Leu Arg Ala Val Met Glu Cys Arg
50 55 60
Asn Val Thr His Leu Leu Gln Gln Glu Leu Thr Glu Ala Gln Lys Gly
65 70 75 80
Phe Gln Asp Val Glu Ala Gln Ala Ala Thr Cys Asn His Thr Val Met
85 90 95
Ala Leu Met Ala Ser Leu Asp Ala Glu Lys Ala Gln Gly Gln Lys Lys
100 105 110
Val Glu Glu Leu Glu Gly Glu Ile Thr Thr Leu Asn His Lys Leu Gln
115 120 125
Asp Ala Ser Ala Glu Val Glu Arg Leu Arg Arg Glu Asn Gln Val Leu
130 135 140
Ser Val Arg Ile Ala Asp Lys Lys Tyr Tyr Pro Ser Ser Gln Asp Ser
145 150 155 160
Ser Ser Ala Ala Ala Pro Gln Leu Leu Ile Val Leu Leu Gly Leu Ser
165 170 175
Ala Leu Leu Gln
180.

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